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ddab same (cholesterol adj1 hemi\$)	4

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Search:

L10

Search History

DATE: Thursday, August 11, 2005 [Printable Copy](#) [Create Case](#)

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DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

<u>L10</u>	ddab same (cholesterol adj1 hemi\$)	4	<u>L10</u>
<u>L9</u>	L8 and 424/450.ccls.	5	<u>L9</u>
<u>L8</u>	dotma same (cholesterol adj1 hemi\$)	55	<u>L8</u>
<u>L7</u>	hist\$cholesterol	0	<u>L7</u>
<u>L6</u>	hist\$chol\$	12	<u>L6</u>
<u>L5</u>	L4 and 424/450.ccls.	6	<u>L5</u>
<u>L4</u>	dotap same (cholesterol adj1 hemi\$)	53	<u>L4</u>
<u>L3</u>	L1 and 424/450.ccls.	12	<u>L3</u>
<u>L2</u>	L1 and liposome	70	<u>L2</u>
<u>L1</u>	dotap same chems	70	<u>L1</u>

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L5: Entry 6 of 6

File: USPT

Jun 29, 1993

DOCUMENT-IDENTIFIER: US 5223263 A

TITLE: Liponucleotide-containing liposomes

Detailed Description Text (72):

The liposomes can be made from the lipid derivatives of nucleoside analogues alone or in combination with any of the conventional synthetic or natural phospholipid liposome materials including phospholipids from natural sources such as egg, plant or animal sources such as phosphatidylcholine, phosphatidylethanolamine, phosphatidylglycerol, sphingomyelin, phosphatidylserine, or phosphatidylinositol. Synthetic phospholipids that may also be used, include, but are not limited to, dimyristoylphosphatidylcholine, dioleoylphosphatidylcholine, dipalmitoylphosphatidylcholine and distearoylphosphatidylcholine, and the corresponding synthetic phosphatidylethanolamines and phosphatidylglycerols. Other additives such as cholesterol or other sterols, cholesterol hemisuccinate, glycolipids, cerebrosides, fatty acids, gangliosides, sphingolipids, 1,2-bis (oleoyloxy)-3-(trimethyl ammonio)propane (DOTAP), N-[1-(2,3-dioleoyl) propyl]-N,N,N-trimethylammonium (chloride) (DOTMA), D,L,-2,3-distearoyloxypropyl(dimethyl)-.beta.-hydroxyethyl ammonium (acetate), glucopsychosine, or psychosine can also be added, as is conventionally known. The relative amounts of phospholipid and additives used in the liposomes may be varied if desired. The preferred ranges are from about 80 to 95 mole percent phospholipid and 5 to 20 mole percent psychosine or other additive. Cholesterol, cholesterol hemisuccinate, fatty acids or DOTAP may be used in amounts ranging from 0 to 50 mole percent. The amounts of antiviral nucleoside analogue incorporated into the lipid layer of liposomes can be varied with the concentration of their lipids ranging from about 0.01 to about 100 mole percent.

Current US Original Classification (1):

424/450

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L5: Entry 3 of 6

File: USPT

Apr 27, 1999

DOCUMENT-IDENTIFIER: US 5897873 A

TITLE: Affinity associated vaccine

Brief Summary Text (25):

In particular applications liposomes may comprise cholesterol hemisuccinate, phosphatidylserine, phosphatidic acid, or phosphatidylglycerol as well as aminodiglyceride, glyceridecholine, stearylamine, trimethylstearylamine, dioctadecyl trimethylammonio derivatives (e.g., 1,2 bis(oleoyloxy)-3-dioctadecyl trimethylammonio propane--"DOTAP") or any bilayer forming amphiphile having a charged hydrophilic moiety.

Current US Original Classification (1):424/450[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

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L9: Entry 3 of 5

File: USPT

Oct 6, 1998

DOCUMENT-IDENTIFIER: US 5817638 A

TITLE: Antiviral liponucleosides: treatment of hepatitis B

Detailed Description Text (36):

Liposomes can be made from the lipid derivatives of nucleoside analogues, preferably in combination with any of the conventional synthetic or natural phospholipid liposome materials including phospholipids from natural sources such as egg, plant or animal sources such as phosphatidylcholines, phosphatidylethanolamines, phosphatidylglycerols, sphingomyelins, phosphatidylserines, or phosphatidylinositols. Synthetic phospholipids that may also be used, include, but are not limited to, dimyristoylphosphatidylcholine, dioleoylphosphatidylcholine, dipalmitoylphosphatidylcholine and distearoylphosphatidylcholine, and the corresponding synthetic phosphatidylethanolamines and phosphatidylglycerols. Other additives such as cholesterol or other sterols, cholesterol hemisuccinate, glycolipids, cerebrosides, fatty acids, gangliosides, sphingolipids, 1,2-bis(oleoyloxy)-3-(trimethyl ammonio) propane (DOTAP), N-[1-(2,3-dioleoyl) propyl]-N,N,N-trimethylammonium (chloride) (DOTMA), D,L,-2,3-distearoyloxypropyl(dimethyl)-.beta.-hydroxyethyl ammonium (acetate), 1,2-dioleoyl-3-dimethylaminopropyl-.beta.-hydroxyethylammonium acetate (DORI diester), 1, 2-O-dioleoyl-3-dimethylaminopropyl-.beta.-hydroxyethylammonium acetate (DORI diether), (DORI ester/ethers), glucopsychosine, or psychosine can also be added, as is conventionally known. The relative amounts of phospholipid and additives used in the liposomes may be varied if desired. The preferred ranges are from about 80 to 95 mole percent phospholipid and 5 to 20 mole percent psychosine or other additive. Cholesterol, cholesterol hemisuccinate, fatty acids or DOTAP may be used in amounts ranging from 0 to 50 mole percent. The amounts of antiviral nucleoside analogue incorporated into the lipid layer of liposomes can be varied with the concentration of their lipids ranging from about 0.01 to about 90 mole percent, preferably up to about 40 or 60 mole percent.

Current US Cross Reference Classification (1):424/450[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

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L10: Entry 2 of 4

File: USPT

Jul 1, 2003

DOCUMENT-IDENTIFIER: US 6585975 B1

TITLE: Use of Salmonella vectors for vaccination against helicobacter infection

Detailed Description Text (20):

Useful liposomes for the purposes of the present invention can be selected, for example, from pH-sensitive liposomes, such as those formed by mixing cholesterol hemisuccinate (CHEMS) and dioleoyl phosphatidyl ethanolamine (DOPE); liposomes containing cationic lipids recognized for their fusiogenic properties, such as 3-beta-(N-(N',N'-dimethylamino-ethane)carbamoyl)cholesterol (DC-chol) and its equivalents, which are described in U.S. Pat. No. 5,283,185 and WO 96/14831; dimethyldioctadecylammonium bromide (DDAB) and the BAY compounds described in EP 91645 and EP 206 037, for example, Bay R1005 (N-(2-deoxy-2-L-leucylamino-beta-D-glucopyranosyl)-N-octa-decyldodecanoyl amide acetate; and liposomes containing MTP-PE, a lipophilic derivative of MDP (muramidyl dipeptide). These liposomes are useful as adjuvants with all of the antigens described herein.

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L11: Entry 4 of 6

File: USPT

Jul 10, 2001

US-PAT-NO: 6258792

DOCUMENT-IDENTIFIER: US 6258792 B1

**** See image for Certificate of Correction ****

TITLE: Cationic cholesteryl derivatives containing cyclic polar groups

DATE-ISSUED: July 10, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Deshmukh; Hermant M.	Carlsbad	CA		
Huang; Leaf	Wexford	PA		

US-CL-CURRENT: [514/44](#); [514/231.2](#), [514/252.1](#), [536/23.1](#), [540/107](#), [540/108](#), [540/113](#)

CLAIMS:

What is claimed is:

1. A nucleic acid:lipid complex for transfecting nucleic acids into cells, said complex comprising a nucleic acid and a compound having the structure:

X--R.sub.2 --R.sub.1 --O-Cholesteryl, wherein

R.sub.1 is a linker bond ##STR10##

R.sub.2 is a direct bond, a branched or linear alkylene or alkenylene chain of 1 to 10 carbons in length, a C.sub.3 -C.sub.7 cycloalkylene, or a phenylene;

X is a 4-7-membered nitrogen-containing cyclic structure; and

X is linked to the R.sub.2 spacer via a carbon atom of the nitrogen-containing cyclic structure or via a nitrogen atom of the cyclic structure.

2. The complex of claim 1, wherein R.sub.1 is ##STR11##

3. The complex of claim 2, wherein X is a saturated ring.

4. The complex of claim 3, wherein R.sub.2 is a direct bond or a linear C.sub.1 -C.sub.3 alkylene chain.

5. The complex of claim 4, wherein X is a 5-6-membered nitrogen-containing cyclic structure.

6. The complex of claim 5, wherein X further comprises a heteroatom selected from the group consisting of S, O, and NR.sub.3, wherein R.sub.3 is --H, --

CH.sub.3, --C.sub.2 H.sub.5, --CH.sub.2 (CH.sub.2).sub.Z OH or --CH.sub.2 (CH.sub.2).sub.Z SH, wherein Z is 0-3.

7. The complex of claim 6, wherein R.sub.2 is a linear C.sub.2 alkylene chain.

8. The complex of claim 5, wherein X is a 6-membered nitrogen-containing cyclic structure.

9. The complex of claim 8, wherein X further comprises a heteroatom selected from the group consisting of S, O, and NR.sub.3, wherein R.sub.3 is --H, --CH.sub.3, --C.sub.2 H.sub.5, --CH.sub.2 (CH.sub.2).sub.Z OH or --CH.sub.2 (CH.sub.2).sub.Z SH, wherein Z is 0-3.

10. The complex of claim 9, wherein R.sub.2 is a direct bond or is a linear C.sub.2 alkylene chain.

11. The complex of claim 10, wherein R.sub.3 is H and R.sub.2 is a linear C.sub.2 alkylene chain.

12. The complex of claim 10, wherein R.sub.2 is a direct bond.

13. The complex of claim 12, wherein R.sub.3 is a methyl group.

14. The complex of claim 8, wherein X is a 6-membered nitrogen-containing cyclic structure which includes an additional heteroatom O.

15. The complex of claim 14, wherein R.sub.2 is a linear C.sub.1-3 alkylene chain.

16. The complex of claim 3, wherein X is an unsaturated ring.

17. The complex of claim wherein X is a 5-6-membered nitrogen-containing cyclic structure which can optionally include a further heteroatom.

18. The complex of claim 17, wherein R.sub.2 is a direct bond or a linear C.sub.1 -C.sub.3 alkylene chain.

19. The complex of claim 18, wherein X is a 5-6-membered nitrogen-containing cyclic structure which includes an additional heteroatom NR.sub.3, wherein R.sub.3 is --H, --CH.sub.3, --C.sub.2 H.sub.5, --CH.sub.2 (CH.sub.2).sub.Z OH or --CH.sub.2 (CH.sub.2).sub.Z SH, wherein Z is 0-3.

20. The complex of claim 18, wherein X is a 5-6-membered nitrogen-containing cyclic structure linked to the R.sub.2 spacer via a carbon atom on the nitrogen-containing cyclic structure.

21. The complex of claim 1, wherein R.sub.2 is a C.sub.5 -C.sub.6 cycloalkylene.

22. The complex of claim 1, wherein X comprises a further heteroatom.

23. The complex of claim 1, wherein X comprises a further heteroatom selected from the group consisting of S, O, and NR.sub.3, where R.sub.3 is --H, --CH.sub.3, --C.sub.2 H.sub.5, --CH.sub.2 (CH.sub.2).sub.Z OH or --CH.sub.2 (CH.sub.2).sub.Z SH, wherein Z is 0-3.

24. The complex of claim 1, further comprising a polycation.
25. The complex of claim 24, wherein the cation is a polyamine.
26. The complex of claim 24, wherein the polycation is a poly-L-lysine.
27. The complex of claim 1, wherein the nucleic acid is selected from the group consisting of a DNA and an RNA molecule.
28. The complex of claim 1 wherein the nucleic acid encodes a protein or peptide or regulates gene expression by effecting transcription and/or translation.
29. A liposome comprising the complex of claim 1.
30. The complex of claim 1, further comprising a cationic lipid.
31. The complex of claim 30, wherein the cationic lipid is selected from the group consisting of cholesterol-3.beta.-carboxyamidoethylenetrimethylammonium iodide, 1-dimethylamino-3-trimethylammonio-DL-2-propyl-cholesterol carboxylate iodide, cholesterol-3.beta.-carboxyamidoethyleneamine, cholesterol-3.beta.-oxysuccinamidoethylenetrimethylammonium iodide, 1-dimethylamino-3-trimethylammonio-DL-2-propyl-cholesterol-3.beta.-oxysuccinate iodide, 2-[(2-trimethylammonio)ethylmethylamino]ethyl-cholesterol-3.beta.-oxysuccinate iodide, 3.beta.[N-(N',N'-dimethylaminoethane)-carbonyl]-cholesterol (DC-chol), and 3.beta.[N-(polyethyleneimine)-carbonyl]cholesterol.
32. The complex of claim 1, further comprising a neutral lipid, a positively charged lipid or a negatively charged lipid.
33. The complex of claim 1, further comprising a lipid selected from the group consisting of cholesterol, dioleoyl phosphatidylethanolamine and dioleoyl phosphatidylcholine.
34. The complex of claim 1, wherein R.sub.1 ##STR12##
- R.sub.2 is a direct bond or a linear C.sub.1 -C.sub.3 alkylene chain, and X is a 4-6-membered nitrogen-containing cyclic structure comprising a further nitrogen heteroatom.
35. The complex of claim 1, wherein R.sub.1 ##STR13##
- R.sub.2 is a linear C.sub.1 -C.sub.3 alkylene chain, and X is a 4-6-membered nitrogen-containing cyclic structure comprising a further heteroatom selected from the group consisting of O, S, and N.
36. The complex of claim 1, wherein R.sub.1 ##STR14##
- R.sub.2 is a direct bond, and X is a 5-7-membered nitrogen-containing cyclic structure comprising a further nitrogen heteroatom.
37. The complex of claim 1, wherein the compound is ##STR15##
38. The complex of claim 34, 35 or 36, wherein X further comprises at least

one additional heteroatom NR.sub.3 where R.sub.3 is --H, --CH.sub.3, --C.sub.2 H.sub.5, CH.sub.2 (CH.sub.2).sub.z, --CH.sub.2 (CH.sub.2).sub.Z OH or --CH.sub.2 (CH.sub.2).sub.Z SH, wherein Z is 0-3.

39. A lipid dispersion comprising a compound according to claim 11.

40. A pharmaceutical composition comprising at least one complex of claim 1.

41. A composition comprising the complex of claim 1 in a physiologically acceptable carrier.

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L11: Entry 5 of 6

File: USPT

May 2, 2000

DOCUMENT-IDENTIFIER: US 6056938 A

**** See image for Certificate of Correction ****

TITLE: Cationic lipids and the use thereof

Detailed Description Text (178):

Lipids which may be used in combination with the present cationic lipid compounds and in the formulation of cationic liposome compositions include ZONYL.TM. fluorosurfactants (DuPont Chemicals, Wilmington, Del.) and the fluorine-containing compounds which are described in the following publications: S. Gaentzler et al., New Journal of Chemistry, Vol. 17(5), pp. 337-344 (1993); C. Santaella et al., New Journal of Chemistry, Vol. 16(3), pp. 399-404 (1992); and L. sole-Violan, New Journal of Chemistry, Vol. 17(8,9), pp. 581-583 (1993); the disclosures of each of which are hereby incorporated by reference, in their entireties. Other exemplary lipids which may be used in the preparation of cationic liposome compositions include phosphatidylcholine with both saturated and unsaturated lipids, including dioleoylphosphatidylcholine, dimyristoylphosphatidylcholine, dipalmitoylphosphatidylcholine (DPPC) and distearoylphosphatidylcholine; phosphatidylethanolamines, such as dioleoylphosphatidylethanolamine and dipalmitoylphosphatidylethanolamine (DPPE); phosphatidylserine; phosphatidylglycerol; sphingolipids; sphingomyelin; lysolipids; glycolipids, such as ganglioside GM1; glucolipids; sulfatides; glycosphingolipids; phosphatidic acids, such as dipalmitoylphosphatidic acid (DPPA); palmitic acid; stearic acid; arachidonic acid; oleic acid; fatty acids; lipids with ether and ester-linked fatty acids; polymerizable lipids; cholesterol, cholesterol sulfate and cholesterol hemisuccinate; 12-([(7'-diethylaminocoumarin-3-yl)carbonyl]methylamino)octadecanoic acid; N-[12-([(7'-diethylaminocoumarin-3-yl)carbonyl]methylamino)-octadecanoyl]- 2-aminopalmitic acid; cholesteryl-4'-trimethylaminobutanoate; N-succinyl dioleoylphosphatidylethanolamine; 1,2-dioleoyl-sn-glycerol; 1,2-dipalmitoyl-sn-3-succinylglycerol; 1,3-dipalmitoyl-2-succinyl-glycerol; 1-hexadecyl-2-palmitoylglycerophosphatidylethanolamine; and palmitoylhomocysteine.

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L11: Entry 6 of 6

File: USPT

Nov 3, 1998

DOCUMENT-IDENTIFIER: US 5830430 A

TITLE: Cationic lipids and the use thereof

Detailed Description Text (175):

Lipids which may be used in combination with the resented cationic lipid compounds and in the formulation of cationic liposome compositions include ZONYL.TM. fluoro surfactants (DuPont Chemicals, Wilmington, Del.) and the fluorine-containing compounds which are described in the following publications: S. Gaentzler et al., New Journal of Chemistry, Vol. 17(5), pp. 337-344 (1993); C. Santaella et al., New Journal of Chemistry, Vol. 16(3), pp. 399-404 (1992); and L. sole-Violan, New Journal of Chemistry, Vol. 17(8,9), pp. 581-583 (1993); the disclosures of each of which are hereby incorporated by reference, in their entireties. Other exemplary lipids which may be used in the preparation of cationic liposome compositions include phosphatidylcholine with both saturated and unsaturated lipids, including dioleoylphosphatidylcholine, dimyristoylphosphatidylcholine, dipalmitoylphosphatidylcholine (DPPC) and distearoylphosphatidylcholine; phosphatidylethanolamines, such as dioleoylphosphatidylethanolamine and dipalmitoylphosphatidylethanolamine (DPPE); phosphatidylserine; phosphatidylglycerol; sphingolipids; sphingomyelin; lysolipids; glycolipids, such as ganglioside GM1; glucolipids; sulfatides; glycosphingolipids; phosphatidic acids, such as dipalmitoylphosphatidic acid (DPPA); palmitic acid; stearic acid; arachidonic acid; oleic acid; fatty acids; lipids with ether and ester-linked fatty acids; polymerizable lipids; cholesterol, cholesterol sulfate and cholesterol hemisuccinate; 12-[[[(7'-diethylaminocoumarin-3-yl)carbonyl]methylamino]octadecanoic acid; N-[12-[[[(7'-diethylaminocoumarin-3-yl)carbonyl]methylamino]-octadecanoyl]-2-aminopalmitic acid; cholesteryl-4'-trimethylaminobutanoate; N-succinyldioleoylphosphatidyl-ethanolamine; 1,2-dioleoyl-sn-glycerol; 1,2-dipalmitoyl-sn-3-succinylglycerol; 1,3-dipalmitoyl-2-succinyl-glycerol; 1-hexadecyl-2-palmitoylglycerophosphatidylethanolamine; and palmitoylhomocysteine.

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(amphoteric adj1 surfactant) same liposome	18

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DATE: Thursday, August 11, 2005 [Printable Copy](#) [Create Case](#)

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<u>L13</u>	(amphoteric adj1 surfactant) same liposome	18	<u>L13</u>
<u>L12</u>	amphoteric adj5 liposome	6	<u>L12</u>
<u>L11</u>	(cationic adj1 \$lipid) same (cholesterol adj1 hemisuccinate)	6	<u>L11</u>
<u>L10</u>	ddab same (cholesterol adj1 hemi\$)	4	<u>L10</u>
<u>L9</u>	L8 and 424/450.ccls.	5	<u>L9</u>
<u>L8</u>	dotma same (cholesterol adj1 hemi\$)	55	<u>L8</u>
<u>L7</u>	hist\$cholesterol	0	<u>L7</u>
<u>L6</u>	hist\$chol\$	12	<u>L6</u>
<u>L5</u>	L4 and 424/450.ccls.	6	<u>L5</u>
<u>L4</u>	dotap same (cholesterol adj1 hemi\$)	53	<u>L4</u>
<u>L3</u>	L1 and 424/450.ccls.	12	<u>L3</u>
<u>L2</u>	L1 and liposome	70	<u>L2</u>
<u>L1</u>	dotap same chems	70	<u>L1</u>

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Terms	Documents
(cholesterol adj1 hemisuccinate) adj2 CHEMS	6

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result set

DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

<u>L3</u>	(cholesterol adj1 hemisuccinate) adj2 CHEMS	6	<u>L3</u>
<u>L2</u>	L1 and chems	6	<u>L2</u>
<u>L1</u>	(cholesterol adj1 hemisuccinate) adj2 liposome	11	<u>L1</u>

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L3: Entry 2 of 6

File: USPT

Oct 19, 1999

DOCUMENT-IDENTIFIER: US 5968549 A

TITLE: Solubilisation aids

Brief Summary Text (36):

(c) can be selected from cholesterol hemisuccinate (Chems) , .alpha.-tocopherol, .alpha.-tocopherol succinate (.alpha.TS) phosphatidic acid (PA), phosphatidyl-glycerol, phosphatidyl-inositol and lyso derivatives of any of the phosphatides.

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Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 6585975 B1

Using default format because multiple data bases are involved.

L3: Entry 1 of 6

File: USPT

Jul 1, 2003

US-PAT-NO: 6585975

DOCUMENT-IDENTIFIER: US 6585975 B1

TITLE: Use of Salmonella vectors for vaccination against helicobacter infection

DATE-ISSUED: July 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kleanthous; Harold	Westford	MA		
Londono-Arcila; Patricia	London			GB
Freeman; Donna	Cambridge			GB
Lee; Cynthia K.	Needham	MA		
Monath; Thomas P.	Harvard	MA		

US-CL-CURRENT: 424/200.1; 424/234.1, 435/6, 435/69.1, 514/44, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw Da
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☐ 2. Document ID: US 5968549 A

L3: Entry 2 of 6

File: USPT

Oct 19, 1999

US-PAT-NO: 5968549

DOCUMENT-IDENTIFIER: US 5968549 A

TITLE: Solubilisation aids

DATE-ISSUED: October 19, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
New; Roger Randal Charles	London			GB
Kirby; Christopher John	Berkshire			GB

US-CL-CURRENT: 424/450; 264/4.1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw D
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☐ 3. Document ID: US 5567434 A

L3: Entry 3 of 6

File: USPT

Oct 22, 1996

US-PAT-NO: 5567434

DOCUMENT-IDENTIFIER: US 5567434 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: October 22, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw D
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☐ 4. Document ID: US 5549910 A

L3: Entry 4 of 6

File: USPT

Aug 27, 1996

US-PAT-NO: 5549910

DOCUMENT-IDENTIFIER: US 5549910 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: August 27, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 424/9.321, 424/9.4, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw D
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☐ 5. Document ID: US 5277914 A

L3: Entry 5 of 6

File: USPT

Jan 11, 1994

US-PAT-NO: 5277914

DOCUMENT-IDENTIFIER: US 5277914 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: January 11, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.7, 424/484, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	RMBC	Draw D
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☐ 6. Document ID: US 5077057 A

L3: Entry 6 of 6

File: USPT

Dec 31, 1991

US-PAT-NO: 5077057

DOCUMENT-IDENTIFIER: US 5077057 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: December 31, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/1.21; 264/4.1, 264/4.3, 264/4.7, 424/450, 424/484, 424/9.321,
424/9.4, 424/9.51, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	RMBC	Draw D
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(cholesterol adj1 hemisuccinate) adj2 CHEMS

6

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L3: Entry 3 of 6

File: USPT

Oct 22, 1996

DOCUMENT-IDENTIFIER: US 5567434 A

TITLE: Preparation of liposome and lipid complex compositions

Detailed Description Text (4):

The term "suitable lipid" as used herein refers to an amphipathic compound which is capable of liposome formation, and is substantially nontoxic when administered at the necessary concentrations as liposomes. Suitable lipids generally have a polar or hydrophilic end, and a nonpolar or hydrophobic end. Suitable lipids include without limitation egg phosphatidylcholine (EPC), egg phosphatidylglycerol (EPG), dipalmitoylphosphatidylcholine (DPPC), cholesterol (Chol), cholesterol sulfate and its salts (CS), cholesterol hemisuccinate and its salts (Chems), cholesterol phosphate and its salts (CP), cholesterol phthalate, cholesterylphosphorylcholine, 3,6,9-trioxaoctan-1-ol-cholesteryl-3e-ol, dimyristoylphosphatidylglycerol (DMPG), dimyristoylphosphatidylcholine (DMPC), hydrogenated soy phosphatidylcholine (HSPC), and other hydroxy-cholesterol or amincholesterol derivatives (see; e.g., K. R. Patel et al., Biochim Biophys Acta (1985) 814:256-64).

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L3: Entry 6 of 6

File: USPT

Dec 31, 1991

DOCUMENT-IDENTIFIER: US 5077057 A

TITLE: Preparation of liposome and lipid complex compositions

Detailed Description Text (4):

The term "suitable lipid" as used herein refers to an amphipathic compound which is capable of liposome formation, and is substantially non-toxic when administered at the necessary concentrations as liposomes. Suitable lipids generally have a polar or hydrophilic end, and a non-polar or hydrophobic end. Suitable lipids include without limitation egg phosphatidylcholine (EPC), egg phosphatidylglycerol (EPG), dipalmitoylphosphatidylcholine (DPPC), cholesterol (Chol), cholesterol sulfate and its salts (CS), cholesterol hemisuccinate and its salts (Chems), cholesterol phosphate and its salts (CP), cholesterol phthalate, cholesterylphosphorylcholine, 3,6,9-trioxaoctan-1-ol-cholesteryl-3e-ol, dimyristoylphosphatidylglycerol (DMPG), dimyristoylphosphatidylcholine (DMPC), hydrogenated soy phosphatidylcholine (HSPC), and other hydroxy-cholesterol or aminocholesterol derivatives (see e.g., K. R. Patel et al, Biochim Biophys Acta (1985) 814:256-64).

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☐ 1. Document ID: US 6585975 B1**Using default format because multiple data bases are involved.**

L3: Entry 1 of 6

File: USPT

Jul 1, 2003

US-PAT-NO: 6585975

DOCUMENT-IDENTIFIER: US 6585975 B1

TITLE: Use of Salmonella vectors for vaccination against helicobacter infection

DATE-ISSUED: July 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kleanthous; Harold	Westford	MA		
Londono-Arcila; Patricia	London			GB
Freeman; Donna	Cambridge			GB
Lee; Cynthia K.	Needham	MA		
Monath; Thomas P.	Harvard	MA		

US-CL-CURRENT: 424/200.1; 424/234.1, 435/6, 435/69.1, 514/44, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KINC	Draw D
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☐ 2. Document ID: US 5968549 A

L3: Entry 2 of 6

File: USPT

Oct 19, 1999

US-PAT-NO: 5968549

DOCUMENT-IDENTIFIER: US 5968549 A

TITLE: Solubilisation aids

DATE-ISSUED: October 19, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
New; Roger Randal Charles	London			GB
Kirby; Christopher John	Berkshire			GB

US-CL-CURRENT: 424/450; 264/4.1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWAC	Draw D
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☐ 3. Document ID: US 5567434 A

L3: Entry 3 of 6

File: USPT

Oct 22, 1996

US-PAT-NO: 5567434

DOCUMENT-IDENTIFIER: US 5567434 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: October 22, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWAC	Draw D
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☐ 4. Document ID: US 5549910 A

L3: Entry 4 of 6

File: USPT

Aug 27, 1996

US-PAT-NO: 5549910

DOCUMENT-IDENTIFIER: US 5549910 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: August 27, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 424/9.321, 424/9.4, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWAC	Draw D
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☐ 5. Document ID: US 5277914 A

L3: Entry 5 of 6

File: USPT

Jan 11, 1994

US-PAT-NO: 5277914

DOCUMENT-IDENTIFIER: US 5277914 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: January 11, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.7, 424/484, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RWMC	Draw D
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☐ 6. Document ID: US 5077057 A

L3: Entry 6 of 6

File: USPT

Dec 31, 1991

US-PAT-NO: 5077057

DOCUMENT-IDENTIFIER: US 5077057 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: December 31, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/1.21; 264/4.1, 264/4.3, 264/4.7, 424/450, 424/484, 424/9.321,
424/9.4, 424/9.51, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	RWMC	Draw D
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Terms	Documents
(cholesterol adj1 hemisuccinate) adj2 CHEMS	6

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☐ 1. Document ID: US 6352716 B1

Using default format because multiple data bases are involved.

L2: Entry 1 of 6

File: USPT

Mar 5, 2002

US-PAT-NO: 6352716

DOCUMENT-IDENTIFIER: US 6352716 B1

TITLE: Steroidal liposomes

DATE-ISSUED: March 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Princeton Junction	NJ		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.6, 424/1.21, 424/9.1, 436/829, 514/182,
514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Data	Reference	Claims	IMC	Draw
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☐ 2. Document ID: US 5288499 A

L2: Entry 2 of 6

File: USPT

Feb 22, 1994

US-PAT-NO: 5288499

DOCUMENT-IDENTIFIER: US 5288499 A

TITLE: Sterodial liposomes

DATE-ISSUED: February 22, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		

Bolcsak; Lois E.	Lawrenceville	NJ
Tremblay; Paul A.	Hamilton	NJ
Swenson; Christine E.	Princeton Junction	NJ

US-CL-CURRENT: 424/450; 264/4.1, 264/4.6, 424/1.21, 424/9.4, 428/402.2, 436/829,
514/167, 514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWMC	Draw De
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☐ 3. Document ID: US 5231112 A

L2: Entry 3 of 6

File: USPT

Jul 27, 1993

US-PAT-NO: 5231112

DOCUMENT-IDENTIFIER: US 5231112 A

TITLE: Compositions containing tris salt of cholesterol hemisuccinate and antifungal

DATE-ISSUED: July 27, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Princeton Junction	NJ		

US-CL-CURRENT: 514/401; 424/DIG.15, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWMC	Draw De
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☐ 4. Document ID: US 5152999 A

L2: Entry 4 of 6

File: USPT

Oct 6, 1992

US-PAT-NO: 5152999

DOCUMENT-IDENTIFIER: US 5152999 A

TITLE: Liposome preparation

DATE-ISSUED: October 6, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tokunaga; Yuji	Sanda			JP
Yamamoto; Takao	Osaka			JP

Hata; Takehisa

Nagaokakyo

JP

US-CL-CURRENT: 424/450; 552/544, 562/563, 562/576

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KAMC	Drawn
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☐ 5. Document ID: US 4891208 A

L2: Entry 5 of 6

File: USPT

Jan 2, 1990

US-PAT-NO: 4891208

DOCUMENT-IDENTIFIER: US 4891208 A

TITLE: Steroidal liposomes

DATE-ISSUED: January 2, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Plainsboro	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Plainsboro	NJ		

US-CL-CURRENT: 424/1.21; 264/4.1, 264/4.6, 424/450, 424/9.4, 424/9.6, 428/402.2,
436/829, 514/167, 514/3, 514/396, 514/78, 514/885, 514/887, 514/967, 604/891.1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KAMC	Drawn
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☐ 6. Document ID: US 4721612 A

L2: Entry 6 of 6

File: USPT

Jan 26, 1988

US-PAT-NO: 4721612

DOCUMENT-IDENTIFIER: US 4721612 A

TITLE: Steroidal liposomes

DATE-ISSUED: January 26, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Plainsboro	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul S.	Hamilton	NJ		

US-CL-CURRENT: 424/1.21; 264/4.1, 264/4.6, 424/450, 424/9.4, 424/9.6, 428/402.2,
436/52, 436/829, 514/167, 514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw Dg
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